Chapter 2.2 Overview of Division of Water Quality's Water Quality Programs

2.2.1 Introduction

The Utah Division of Utah (DWQ) is responsible for a variety of programs that monitor, assess, and protect the surface and ground waters of the state. To meet its responsibilities the Division has seven sections that deal with point sources, nonpoint sources, waste water plant construction, ground water protection, and monitoring. These sections and their attendant responsibilities form the State's water pollution control program

2.2.2 Water Pollution Control Programs

2.2.2.1 Watershed Approach - 305(b) Program

The DWQ uses a 5-year rotating monitoring process to assess the rivers and streams within the state. The state has been divided into 10 watershed management units and these have been aggregated into five monitoring regions that are designed to cover the state every five years.

In addition, the DWQ has cooperative monitoring programs with the United States Forest Service, United State Bureau of Land Management, National Park Service, and the Provo River Watershed Management Group to assist those groups and to enhance its water quality assessment program.

Every year, usually in February, the DWQ has a work meeting with individuals from each of the National Forest and Regional Offices of the BLM to evaluate their needs and to determine what they have planned related to water quality in the coming year.

After their requests are submitted, the 305(b) Coordinator, the watershed coordinators in the Total Maximum Daily Load (TMDL) Section, and the Monitoring Section review each one to determine if their request meets the needs of the Division and to determine the needed laboratory capacity for the upcoming monitoring year. The monitoring year is based upon the State's fiscal year which runs from July 1st through June 30th of the next year.

After receiving their requests, Division personnel in the 319 NonPoint Source Program, the 314 Clean Lakes Program, the Total Maximum Daily Load TMDL Program (TMDL), the 305(b) Program, and the 303(d) Program determine what sites will be monitored during the current rotating intensive monitoring and other sites that are needed statewide to meet their needs. Once the review is complete, the monitoring needs are included in the yearly water quality monitoring document. This document identifies each of the sites

that are to be monitored and what parameters are to be obtained in the field and analyzed for in the laboratory. The ground water monitoring is also included in this document.

2.2.2.2 Clean Lakes Program - 314 Program

The DWQ continues to monitor and assess its priority lakes on an odd/even year basis. Approximately, half of the lakes are monitored during the odd and even number years. However, if additional data are required to develop a Total Maximum Daily Load (TMDL) analysis for a lake or reservoir, the monitoring frequency and additional sites are incorporated into the monitoring scheme to obtain more data.

2.2.2.3. Nonpoint Source Program Overview -319 Program

The mission of the Utah Nonpoint Source Pollution Management Program is to support the environmental protection goals of the state as described in the Utah Administrative Code R317-2 in part to: 1) to conserve the waters of the state; 2) to protect, maintain, and improve the quality of the waters of the state for public water supplies, species protection and propagation and for other designated uses; and 3) to provide for the prevention, abatement and control of new or existing sources of polluted runoff. The Utah NPS Management Program works to achieve these goals by working in concert with numerous local, state and federal agencies and private parties to perform the objectives and tasks identified in the NPS Pollution Management Plan.

Nonpoint source pollution generally originates from sources rather than from a discrete point such as a pipe. Sources include land runoff, percolation, precipitation or atmospheric deposition. Rain and other forms of precipitation wash pollutants from the air and land and into our streams, lakes, reservoirs and groundwater. Such pollutants can include sediment, nutrients, pathogens (bacteria and viruses), toxic chemicals, pesticides, oil, grease, salt and heavy metals. In Utah our most common problems are sediment, nutrients, metals, salts and pathogens. These pollutants alter the chemical, physical and biological quality of the water and can impair their designated uses.

Some common sources of NPS pollution include various agricultural activities, natural sources, runoff from parking lots and streets and residential areas, mining and forestry operations, recreational activities, underground wastewater treatment systems, construction and stream/riparian habitat degradation and other forms of hydrologic modification.

Fiscal year 2007 (FY-07) ended with six new projects contracted to the UDAF for some $521,900. On-the-ground implementation projects are continuing in such watersheds as Upper Sevier River, Middle Sevier River, San Pitch River, Fremont River, Bear River, and West Colorado River. Several new information and education outreach projects were funded in FY-07 including the Bear River Information and Education Outreach program to support the Bear River Task Force, the Bear Lake Regional Commission and Jordan River Watershed Council for work related to water quality. Funds were provided to educate entities involved in oil and gas drilling in the

Uinta Basin about erosion control. Projects were also funded at Utah State University to assess and improve the treatment and handling of septage wastes and to continue the excellent statewide NPS education and outreach program conducted through Extension Service and the College of Natural Resources. Seven watershed TMDL implementation projects were funded including new a new project with Salt Lake County to re-build the Alta Fen to decrease heavy metal loading, principally zinc, to Little Cottonwood Creek. Funding was also provided to the Utah Division of Wildlife Resources to utilize to restore riparian and stream bank ecosystems and promote and (or) acquire riparian conservation easement.

The NPS Task Force with assistance primarily from the Utah Department of Agriculture and Food joined forces with the Bear River Commission as the lead entity, together with Utah State University and the Eccles Conference Center and USU to sponsor the 2007 Bear River Symposium and NPS Water Quality Conference held September 5, 6 and 7th in Logan Utah. The Symposium began on the 5th with tours of water conservation related projects northern Cache Valley and water quality improvement projects along the Bear River. Numerous technical sessions and two general sessions were held on September 6 and 7th dealing with topic focused on the Bear River Targeted Watershed Grant studies of pollution trading and the Bear River Watershed Information System. Other topics ranged from water quality modeling, sediment transport, fishery evaluations, TMDL development for Cutler Reservoir and the Middle Bear River, biological assessment and analytical methods, monitoring for the evaluation of BMP implementation, Tri-state Bear River monitoring and sociological study of cooperator behavior in the Little Bear River.

Much effort has gone into the continued enhancement of statewide watershed planning groups at the local level. Some thirty local watershed committees are actively assisting and promoting TMDL development and implementation of watershed projects. The Utah Watershed Coordinating Council continues to meet 2 or 3 times per year to exchange information, provide training and promote the local ownership and development of TMDLs and watershed restoration plans. Fifteen to twenty watershed coordinators, including the occasional private chairpersons of local committees and a few agency support staff regularly attend the Council meetings. This year the DWQ and the Council became part of the grant proposal by Trees, Water and People to EPA and is receiving $100,000 of two years for several activities geared to strengthening the Council and respective local watershed coordinators and local watershed committees.

Significant resources from 319, EQIP and Congressional “earmark” funds continue to support the implementation of the Utah AFO/CAFO Strategy by the Utah Department of Agriculture and Food, the UACD, Utah Farm Bureau Federation, agriculture commodity groups and other state and federal partners.

The Utah Department of Environmental Quality and Utah Department of Agriculture & Food are working together in a partnership with commodity groups and farm organizations in the development of an Air Quality Strategy similar to the AFO/CAFO strategy developed for water quality. DEQ has signed an MOU with

EPA which establishes a collaborative working relationship to develop and implement the Utah Animal Feeding Operation Air Quality Strategy. The purposes of the strategy are to gather air emissions information from AFOs and implement programs to reduce emissions.

The NPS staff and Task Force partnership will continue to support TMDL development and implementation through the watershed approach in dealing with the NPS challenges in Utah. This program will continue to utilize the local delivery system of the Utah Conservation Districts and other entities such as counties, water conservancy districts to assist with planning and implementation of best management practices to meet Total Maximum Daily Loads contained in their respective TMDL Plans and watershed-based implementation plans. This is being carried out through the establishment of more local watershed coordinators in priority watersheds where TMDLs have been approved by EPA and are being implemented.

A new local watershed coordinator position was established in the Lower Weber River via agreement/contract between USU Extension Service and DWQ. A new coordinator was also hired in the Uinta Basin on contract with the Duchesne Conservation District. The primary purpose of the nine local watershed coordinators is to facilitate, coordinate and report on the implementation of TMDL/watershed plans. They track and report progress to the UDAF on 319 projects in their watersheds.

The coming year resources and efforts focused to provide technical and financial assistance to potential CAFOs to correct unacceptable conditions will continue.. The Division of Water Quality in cooperation with the Utah AFO/CAFO Committee and EPA is working to revise and extend the original AFO/CAFO Strategy through December 2012 from its current end date of December 2008. Additional funding to continue implementations may be sought. Planning and implementation efforts are ongoing and coordinated by UACD and UFBF staff supported in part by 'congressional earmark' funding thru NRCS and CWA 319 funds. Assistance to permitted operations (CAFOs) via a general permit from DEQ will continue through increased compliance activities. In late 2007 or 2008, pursuant to new federal regulations and state rules, CAFOs will receive a new general permit with site-specific nutrient management plans. The AFO inventory and assessment was completed in April 2003. The inventory currently identifies 398 'Potential CAFOs' which have been the focus of intensive technical and financial support to correct unacceptable conditions through implementation of CNMPs and facility specific nutrient management plans. As of December 31, 2006, some 258 'Potential CAFOs' (65%) have completed implementation of their plans.

The DEQ and UDAF has and will continue in 2008 to improve program reporting especially relating to timely receipt, review and approval of 319 project final reports. Increased emphasis will be devoted toward working with project sponsors to secure environmental results information in mid-year, annual and final project reports. Efforts in FY-2008 will be focused on gathering all final project reports and closing the FY-99 and the FY-2000 Nonpoint Source Project Grants (Cooperative

Agreements). The FY-97 and FY-98 Grant Agreements were closed in June and August 2007, respectively. Several NPS 319 Project Grants including FY-2001 thru FY-2004 are due to terminate on September 30, 2008. DEQ and UDAF are hopeful to close some of these in FY-2009.

DWQ NPS staff will continue working on updates to the NPS Program Management Plan related to urban/storm water and hydrologic modifications. These plans will not be completed until late 2008 and 2009 respectively because of other work assignments and priorities. Efforts are also underway to prepare an abandoned/inactive mine component to the Plan to be completed by May 2008.

The DWQ is increasing its emphasis on riparian and stream channel protection and enhancement through improved coordination with NRCS EQIP funds, Watershed Initiative Funds with DNR and perhaps with UDAF's new Grazing Improvement Program. Negotiations are ongoing with Division of Wildlife Resources regarding land acquisition and easements for the improvement of water quality and enhancement of fish habitat on Weber River and Scofield Reservoir or other priority areas jointly determined by DWQ and Division of Wildlife Resources (DWR). In 2007 nearly $950,000 was put in contract with DWR for implementation of such riparian stream restorations and conservation easements.

2.2.2.4 Water Quality Standards Program

In 2007, the triennial review was initiated. The process included the creation of a Water Quality Standards Work Group composed of interested agencies and the public to provide input to the Division. The areas of major concern were total dissolved solids (TDS), *E. coli*, redefinition of the recreational use classifications, antidegradation, and the triennial review process in rule. It is expected that these changes will go to the Utah Water Quality Board in early 2008 and become rule by mid-year.

2.2.2.5 Point Source Control Program

The Utah Division of Utah (DWQ) is responsible for a variety of programs that monitor, assess, and protect the surface and ground waters of the state. To meet its responsibilities the Division has seven sections that deal with point sources, nonpoint sources, waste water plant construction, ground water protection, and monitoring. These sections and their attendant responsibilities form the State's water pollution control program

Point source discharges, both municipal and industrial, are regulated through the Utah Pollutant Discharge Elimination System Program (UPDES). Regulatory authority was delegated to the State in July of 1987, and includes permit, compliance, and enforcement authority. In addition to municipal and industrial discharge regulation, program authority was granted for general permits, federal facilities and industrial pretreatment programs. Program authority to issue biosolids (sludge) permits was delegated to Utah in 1996.

Permits are issued for up to five years and reflect both technology-based controls, and where appropriate, water quality based controls using wasteload analyses, current water quality standards and final TMDL results. Water quality parameters for which effluent limitations have been developed to protect the waters of the State include ammonia, total dissolved solids; DO, total residual chlorine, BOD, temperature, various nutrients and toxics.

Fifty-four (54) industrial and sixty-five (65) municipal facilities are currently regulated under the UPDES program. These include eight (8) major industrial and twenty-five (25) major municipal dischargers. The State of Utah has begun consolidating permits to contain all pertinent requirements. For example a consolidated municipal permit will contain limits for the discharge, biosolids, pretreatment, storm water and whole effluent toxicity. Eventually all the municipal permits will be consolidated. The same is being done for the industrial permits, which would include limits for the discharge, storm water, and whole effluent toxicity. The idea is to combine different permits that would be issued to a facility into one permit. Many of the facilities have multiple discharge points that are regulated under a single permit. Major industrial dischargers include mining and manufacturing facilities, such as Kennecott Copper and Thiokol, while the major municipal dischargers are sewage treatment facilities that may or may not receive pretreated wastewaters from industries. Of the twenty-five (25) major municipal discharges, eighteen (18) have State approved pretreatment industrial programs which are used to regulate industries that would not otherwise be subject to UPDES permits because they discharge to a municipal sewer system rather than directly to the waters of the State. Because municipal treatment plants are designed primarily to treat domestic wastes, not industrial wastes, the pretreatment of industrial wastewaters ensures that toxic metals and toxic organic pollutants do not pass through the treatment plants untreated and enter the receiving streams. Without pretreatment, these pollutants could also severely impact the treatment capability of the municipal plants by killing beneficial bacteria that are essential for the decomposition of wastes.

To date, there also are approximately 2900 storm water discharge general permits throughout the state, that regulate, control and thereby reduce the discharge of pollutants from construction sites, industrial sites and municipalities. In addition, there were eighty-one (81) general industrial permits in effect that regulate such activities as construction dewatering and concentrated aquatic animal production. Table 2.2-1 provides a summary of these permits and the activities they regulate.

Table 2.2-1 General UPDES Permits

Type	Number
Mining	16
Construction Dewatering	13
Concentrated Aquatic Animal Production	13
Drinking Water Treatment Plants	37
Treated Ground Water Contaminated with Petroleum	2

Upon issuance of a discharge permit, the monitoring phase of the State's UPDES program is initiated to ensure that all conditions of a permit are being met. This includes compliance monitoring. Compliance monitoring requires self-monitoring by the permittee as well as State monitoring to determine if effluent violations are occurring. Self-monitoring results are reported to the State and to EPA in a Discharge Monitoring Report (DMR) that is sent to the State and EPA as required by the permit. Additionally, all UPDES facilities are inspected on a regular basis to determine if they are meeting the conditions of their permit and are being operated in the prescribed manner necessary to ensure that effluents do not cause violation of State water quality standards for receiving water.

The permittee may also be required to implement biomonitoring as part of their discharge permit. Specific rules and guidelines are published in the Division of Water Quality's *Enforcement Guidance Document for Whole Effluent Toxicity Control Manual (Utah DWQ, 1991).* In general the following standards in conjunction with the volume of the discharge are used in determining whether biomonitoring is required or not: (1) there is a reasonable potential to discharge toxics, and/or (2) the receiving water has a low flow dilution greater than 20; 1, and/or (3) the discharge is intermittent, and/or (4) the receiving water has a use-classification of 3A, 3B, 3C, 3E, or 4.

Eighteen (18) industrial and twenty-three (23) municipal dischargers were required to conduct acute or acute/chronic bioassays during the current 305(b) reporting cycle. The majority of toxicity tests indicate an absence of toxic pollutants; however some facilities have had violations and were required to do additional testing. Eventually the permitted would be required to complete a toxicity reduction evaluation (TRE) whose purpose is to identify the toxicant and provide a way to eliminate it from the system (pretreatment) or modify the system to treat the identified toxicant.

All permits, new or renewal of a permit must go through waste load allocation analysis and review before they are issued. Based upon the results of the waste load allocation analysis, stricter effluent limitations may be placed on the permittee to ensure that state water quality standards are not violated.

The Utah Pollutant Discharge Elimination System (UPDES) Storm Water Permitting Program requires individual permits or general permit coverages for storm water discharges from: 1. Construction activities; 2. Industrial sites and; 3. Municipal separate storm sewer systems, which meet certain criteria. A brief discussion of the three discharge types is below:

2.2.2.5.1 Construction Activities

Storm water runoff from construction activities can have a significant impact on water quality. Construction activities can remove vegetation, disturb and compact soils, and largely replace absorbent soils with impermeable roofs, pavements, or shallow sods.

As storm water flows over a construction site, it can pickup sediment, debris, chemicals, thermal and other pollutants. Polluted storm water runoff can harm or kill fish and other wildlife, and can increase costs to use the water for municipal, irrigation, or other beneficial uses. Sedimentation from construction activities can destroy aquatic habitat, degrade stream aesthetics, and high intensity runoff can significantly increase stream bank erosion.

The UPDES Storm water program requires operators of construction sites of one acre or larger (including smaller sites that are part of a larger common plan of development) to obtain a permit coverage under the UPDES General Storm Water Permit for Construction Activities. To obtain the required UPDES permit, the operator of construction sites, or of parcels within a larger common plan, must first develop a stormwater pollution prevention plan (SWPPP) and submit a "notice of intent (NOI)" to the Division of Water Quality to obtain the permit coverage. The NOI has been automated and is available for electronic submission on the Internet.

The development and implementation of storm water pollution prevention plans (SWPPP's) is the focus of UPDES storm water permits for regulated construction activities. DWQ, municipalities, and counties evaluate SWPPP's and their implementation through onsite inspections.

2.2.2.5.2 Industrial Activities

Activities that take place at industrial facilities, such as material handling and storage, are often exposed to the weather. As runoff from rain or snowmelt comes into contact with these materials, it picks up pollutants and transports them to nearby storm sewer systems, rivers, lakes, or coastal waters.

In order to minimize the impact of stormwater discharges from industrial facilities, the UPDES program includes an industrial stormwater permitting component. Operators of industrial facilities included in one of the 11 categories of stormwater discharges associated with industrial activity that discharge or have the potential to discharge stormwater to a municipal separate storm sewer system (MS4) or directly to waters of the State require authorization under a the UPDES Storm Water Multi-Sector General Permit, DWQ also includes storm water requirements at many of the facilities with an individual UPDES permit for wastewater discharge. (Construction activity is one of the 11 categories, but because of the nature of its operations, it's discussed separately from the other 10 categories, and is permitted separately.)

The focus is again on the implementation of an SWPPP for the facility. DWQ reviews SWPPP's at the industrial facility.

2.2.2.5.3 Municipal Separate Storm Sewer Systems

Under the UPDES storm water program, operators of Medium and regulated small municipal separate storm sewer systems (MS4s) (There are no Large MS4's in Utah) require authorization to discharge pollutants under a UPDES permit.

Medium MS4 operators include Salt Lake County, Salt Lake City and UDOT. They were required to submit comprehensive permit applications and were issued individual permits.

Regulated small MS4 operators have the option of choosing to be covered by an individual permit, a general permit, or a modification of an existing Phase I MS4's individual permit. In the case of the municipalities within Salt Lake County, they chose to be co-permitted with the county. Small MS4's outside of the county chose to obtain general permit coverages.

The MS4 permits require the development and implementation of a Storm Water Management Program (SWMP). These programs must be implemented to address the six minimum controls measures in the permit. The six control measures are as follows:

1. Public Education

2. Public Outreach

3. Illicit Discharge Detection and Elimination

4. Post Construction and Redevelopment Controls

5. Good Housekeeping for Municipal Operations

The MS4 SWMP's are reviewed by DWQ through audits.

2.2.2.6 Total Maximum Daily Load (TMDL) Program

The State of Utah's Total Maximum Daily Load (TMDL) and Watershed Planning Program is focused on restoring the beneficial uses of all of the State's impaired Assessment Units. It is responsible for developing TMDLs for assessment units that are listed on the state's 303(d) list of impaired waters. Through the TMDLs process, the sources of the pollutants of concern are identified and the allowable loads are allocated amongst the various point, non-point, and natural sources. The Section is then responsible for developing implementation plans to reduce pollutant loadings and improve water quality.

A key element in restoring the beneficial uses in a watershed is soliciting the involvement and leadership of local stewards through the formation and support of watershed stakeholder groups. TMDL Coordinators are assigned primary coordination

responsibilities for one or more of the ten watershed management units within the State. At the initiation of a TMDL water quality study local stakeholders, representatives from the regulated community and relevant partner agencies are invited to participate throughout the entire process, from preliminary data review to implementation plan development. Once the TMDL/Watershed plan is complete the TMDL Coordinators are responsible for ensuring that appropriate limits are incorporated into discharge permits and to assist in obtaining funding to address non-point sources of pollutants. During the implementation phase the TMDL Coordinators are also responsible for tracking and reporting progress towards achieving water quality goals.

There are currently over 30 local watershed groups throughout the State of Utah in various phases of plan development or implementation. These groups are supported by the Utah Watershed Coordinating Council, initiated by the Division of Water Quality to disseminate information, training opportunities and guidance on successful watershed planning and implementation efforts. The Support Team for the Watershed Council is made up of agency representatives from the Utah Association of Conservation Districts, Utah State University Extension Service, Utah Department of Agriculture and Food, and the Natural Resources Conservation Service. In addition, through the support of EPA Section 319 funds nine local watershed coordinators have been hired by local watershed groups to help facilitate the planning and implementation of best management practices in their high priority watershed.

To date, there have been 129 TMDLs completed and approved by EPA.

2.2.2.7 Ground Water Protection Program

Utah's Water Quality Board has been dedicated to providing a sound ground water anti-degradation policy for the State of Utah. As a result of this commitment, *Administrative Rules for Ground Water Quality Protection (UAC R317-6)* were promulgated in 1989 for the protection of Utah's ground water resources. These rules form the basis for a formal program to protect the present and probable future beneficial uses of ground water throughout the state. The intent of the rules is to require a permit for a facility or activity that, during normal operations or activities of the facility, may have a discharge that will affect ground water quality. The Ground Water Protection Section within the Utah Division of Water Quality administers the ground water permitting program. Currently, there are 35 active ground water discharge permits regulating approximately 90 facilities. The majority of these permits are for activities and operations primarily associated with agriculture and mineral extraction. Since 1989, the *Ground Water Quality Protection Rules (UAC R317-6)* have been revised three times, primarily to update Federal Drinking Water Standards established by EPA, which serve as the basis for Utah's ground water quality standards and permit-specific protection levels. In February 2007, the Water Quality Board approved a rulemaking action to adopt a set of agricultural liner criteria tables into the *Ground Water Quality Protection Rules (UAC R317-6).* These liner criteria tables are the product of an agricultural stakeholder best available technology (BAT) work group formed in response to stakeholder feedback regarding more stringent liner requirements for animal wastewater lagoons. The BAT work group was comprised

of agricultural stakeholders from Farm Bureau Federation, Utah State University Cooperative Extension Service, Natural Resources Conservation Service, Division of Water Quality, Department of Agriculture and Food, Utah Dairyman Association, and several agricultural producers. The liner criteria tables determine what type of liner is appropriate for any site based on the site-specific risk and vulnerability of contamination to waters of the state, including ground water.

The Ground Water Protection Section conducts annual permit site inspections, reviews quarterly and semi-annual compliance monitoring reports, and if necessary, implements enforcement activities for permit non-compliances. Additionally, the Section was actively involved in the finalization of two multi-million dollar ground water contamination Consent Agreements and associated Natural Resource Damage Claims. Ground Water Classification for Aquifers is a valuable part of the Ground Water Protection Program, and as of September 14, 2007, 10 aquifers have been classified within the State. Since the inception of the program in 1989, the Section has conducted outreach efforts to encourage local governments to institute ground water protection measures. The Section has been instrumental in coordinating the passage of a Salt Lake County-wide ground water protection ordinance that has been nationally recognized. In conjunction with the Utah League of Cities and Towns, the Section has successfully held its 13th Annual Statewide Water Planning Conference for professional planners and local Planning and Zoning Commissions. The Section has also been effective in implementing over one million dollars in non-point source projects for ground water protection. Ground water quality protection priorities include: the administration of a Statewide Ground Water Protection Program; the annual assessment of ground water quality statewide; the integration of ground water protection measures into local planning; development of new partnerships to protect ground water quality statewide; and the continued commitment in establishing consistent ground water protection measures.

The second primary program administered within the Ground Water Protection Section is the federally-mandated 1422 Underground Injection Control (UIC) Program. The Utah UIC Program regulates underground injection of Class I, III, IV, and V injection wells by prohibiting injection activity which would allow movement of fluid containing any contaminant into underground sources of drinking water (USDWs) if the presence of that contaminant may cause a violation of any primary drinking water regulation (40 CFR Part 141 and Utah Primary Drinking Water Standards R309-200-5), or which may adversely affect the health of persons. Underground Injection means the subsurface emplacement of fluids through a bored, drilled, or driven shaft or a dug hole whose depth is greater than the largest surface dimension, or an improved sinkhole or a subsurface fluid distribution system consisting of an assemblage of perforated pipes, drain tiles, or other similar mechanisms intended to distribute fluids below the surface of the ground (UAC R317-7-2 and 40CFR 144.3).

An Underground Source of Drinking Water or USDW means an aquifer or portion thereof which:

(a) (1) Supplies any public water system; or

(2) Contains a sufficient quantity of ground water to supply a public water system; and

(i) Currently supplies drinking water for human consumption; or

(ii) Contains fewer than 10,000 mg/l total dissolved solids (TDS); and

(b) Is not an exempted aquifer as designated according to the procedures in 40 CFR 144.7.

Currently, the Utah 1422 UIC Program is reviewing a Class I permit application; oversees an area permit for seven active Class III wells at a potash solution mining operation; coordinates with the Utah Division of Solid and Hazardous Waste and the Division of Environmental Response and Remediation in the use of exempt Class IV injection wells for RCRA and CERCLA-related aquifer remediation, and manages over 5,500 Class V injections wells. Class V injection wells represent, by far, the greatest number of wells in Utah and the greatest diversity of industry sectors with 30 well subclasses ranging from storm water drainage wells to a deep underground hydrocarbon storage facility.

As land development continues to increase in Utah, the potential for ground water contamination also increases from storm water drainage wells and from UIC-regulated on-site domestic wastewater disposal systems in communities without sanitary sewer or storm water drainage systems, respectively. Utah is also experiencing an increased interest in and application for subsurface disposal of industrial wastewater brought on by the restrictions in surface discharge through implementation of TMDLs and the Colorado Salinity Forum as well as prohibitions to surface discharge by the US Forest Service. The Utah 1422 UIC Program coordinates with the Utah Source Water Protection Program administered by the Division of Drinking Water by prioritizing its inspection and permitting activity for UIC regulated facilities that lie within ground waster based source water protection zones.

Expansion of the areas of regulatory oversight for the 1422 UIC Program has occurred with the recent funding by DOE for a pilot carbon sequestration project located east of Wellington. Furthermore, Senate Bill 202 (2008 General Legislative session) includes provisions for the development of administrative rules to address carbon capture and geological sequestration. It is anticipated that these rules (if the bill passes) will be developed concurrently with those being developed by the USEPA for carbon sequestration.

2.2.2.8 Wetlands Assessment Program

The DWQ initiated its wetlands assessment program in 2004 with focus on whether the beneficial use, support for waterfowl and shorebirds and the aquatic life in their food chain, is being fully supported in Great Salt Lake wetlands. The Primary objective is to

establish appropriate nutrient criteria for Farmington Bay wetlands. The wetlands program is also developing a rapid assessment method with the anticipation of providing a protocol to be used for 404 permits for use by the US Corps of Engineers and Utah Department of Transportation. This method is currently being developed in the Great Salt Lake basin but its utility will eventually be expanded to statewide use and for 305(b) assessments.

2.2.2.9 Cost/Benefit Assessment

2.2.2.9.1 Point Source

Since 1972 some 410 wastewater projects have received financial assistance from EPA Construction Grants, the State Revolving Fund (SRF), or the Utah Wastewater Project Assistance Program (UWPAP), which includes the Utah Wastewater Loan Program and the Utah Hardship Grant Fund. To date, assistance on these projects totals more than $594 million with total project costs estimated to exceed one billion dollars (assuming that Construction Grant funding represents 50% of eligible project costs).

The EPA grants program was phased out in 1991. Since then, the SRF and WQPAP have provided the majority of funding. However, in 1996, the Utah Water Quality Board implemented a grant program to assist small communities which are limited in their ability to afford a water quality project. Since its implementation, a number of communities have been given grant assistance for planning, design and construction activities. Typically, advances given to communities for planning and design are repaid to the Hardship Grant program with proceeds from the long-term funding provided by the Utah Water Quality Board. All funding to projects in Utah have been given to a body politic. Although a majority of the projects have been for the planning, design and construction of wastewater collection and treat facilities in communities, many of the projects have provided water quality protection to recreational and environmentally sensitive areas. A few examples are the projects that were constructed along the shores of Bear Lake, at Scofield Reservoir, communities along the Weber and Bear Rivers, Jordanelle Reservoir and several projects in the upper reaches of watersheds which include recreational areas. Most all of Utah has, at one time, utilized cesspools or individual septic tank/drain field systems to meet their wastewater treatment needs.

The construction of centralized wastewater collection and treatment facilities provides water quality protection for both surface and ground water quality. Presently, there are only 5 cities and towns in Utah with population over 1,000 that do not have a centralized wastewater collection and treatment system.

Table 2.2-2 Funding Amounts for Wastewater and Treatment Facilities

Fund Source	Amount (millions)
State Revolving Fund (SRF)	$270
Utah Wastewater Loan Program (UWLP)	$78
Construction Grants	$211
Hardship Grant Fund	$35

Other benefits derived from the funding of wastewater projects include:

1. Public Education about the need for water quality and environmental protection

2. Prevention of water quality degradation in surface and ground water sources

3. Protection of fisheries in discharge receiving streams

4. Education of State Legislators on the need for funding of water quality projects

5. Protection of Public health

6. Beneficial reuse of biosolids resulting from wastewater treatment.

Communities have established operations and maintenance procedures for their wastewater collection and treatment systems. This ensures proper operations and helps to prevent damage to the environment.

Most recently, an increased interest in reusing treated effluent for irrigation purposes.

It may be hard to quantify the benefits that have been derived from the capital expenditures since 1972, yet it is easy to see that if the projects were not constructed, water quality in general would have degraded in the state of Utah. It is believed that the benefits of such funding and water quality programs far out-weigh the costs involved.

2.2.2.9.2 Nonpoint Source

The DWQ has received over 26 million dollars in funding under the EPA NPS 319 Program (F). Funding was used for planning, monitoring, assessment, technical support, and enforcement. Other funds were used for implementation programs under the Utah Department of Environmental Quality and the Utah Department of Agriculture and Food.

The funding distribution for the various components of the NPS 319 program is illustrated in Figure II-3. Funding was used for administration, watershed demonstration projects, information and education, monitoring, assessment, TMDL development, enforcement and planning.

It is very difficult to determine the cost/benefits for nonpoint source projects because it may take 5 or more years to see any improvements in a watershed. The assessment becomes more difficult when only a portion of the stakeholders in a watershed are participating in the implementation program.Since the inception of the program, the DWQ has removed on watershed from Utah's 303(d) list that was impacted by only nonpoint sources of pollution. The Mill Creek watershed was on the list for sedimentation, habitat alteration and bacteria.

Several areas of the stream channel were reconstructed and the recreational facilities were moved away from the stream to lessen human impact on the riparian habitat. A program was implemented by Salt Lake City that required animal owners to remove feces that there dogs excreted. The DWQ assessed the results and the bacteria standard was being met, and the riparian habitat had recovered significantly.

A segment of another watershed on the Little Bear River was removed from the 303(d) list also. This segment was impacted by point and nonpoint sources. The implementation of best management practices within this watershed played a significant role in reducing nutrient input to the stream which was the cause of the impairment.

The formation of watershed management committees to review, provide input and to assist in implementing projects with watersheds has been very successful. It has made people more aware of what the water quality issues are and they have begun to take pride in their watersheds. The funding for part-time watershed coordinators has also been very important. These individuals live in the watersheds and are able to communicate on a more regular basis with people that live in there. It has contributed to a more open dialogue on water quality issues and how they can be approached on a cooperative basis instead of being fearful of the process.

Table 2.2-3 Nonpoint Source 319 Funding FY-90 Through FY-05

Department of Environmental Quality		Utah Department of Agriculture and Food	
Monitoring, Planning, Assessment, Technical Support, Enforcement	$4,260,810 (16%)	Program Implementation	$13,833,740 (83%)
Project Contracts (Implementation)	$5,327,800 (20%)	Program Management and Technical Support	$2,800,742 (17%)
UDAF – Ag NPS Program Management and Implementation	$16,634,486 (63%)		

Table 2.2-4 Nonpoint Source Funding Distribution: 1990-2007

Category	Amount	Percent
Administration	$718,090	3%
Management Technical Support, Enforcement	$5,082,845	19%
Watershed Demonstration Projects	$12,538,720	48%
Information and Education	$2,911,625	11%
Ground Water Studies	$1,407,100	5%
Monitoring, Assessment and TMDL Development	$3,564,730	14%